UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
Seattle, WA 98115

Refer to:
2004/00210

July 26, 2004

Mr. Fred Patron
U.S. Department of Transportation
Federal Highway Administration
The Equitable Center, Suite 100
530 Center Street NE
Salem, Oregon 97301

Re: Endangered Species Act Section 7 Formal Consultation and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation for the Calapooia River (Driver Road) Bridge Replacement Project, Calapooia River, Linn County, Oregon (6th Field HUC: 170900030403)

Dear Mr. Patron:

Enclosed is a biological opinion (Opinion) prepared by the National Marine Fisheries Service (NOAA Fisheries) pursuant to section 7 of the Endangered Species Act (ESA) on the effects of the proposed Calapooia River (Driver Road) Bridge Replacement Project on the Calapooia River in Linn County, Oregon. In this Opinion, NOAA Fisheries concludes that the proposed action is not likely to jeopardize the continued existence of ESA-listed Upper Willamette River (UWR) Chinook salmon (*Oncorhynchus tshawytscha*)and UWR steelhead (*O. mykiss*). As required by section 7 of the ESA, NOAA Fisheries includes reasonable and prudent measures with non-discretionary terms and conditions that NOAA Fisheries believes are necessary to minimize the impact of incidental take associated with this action.

This document also serves as consultation on essential fish habitat (EFH) pursuant to section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and includes conservation recommendations to avoid, minimize, or otherwise offset potential adverse effects to EFH. Section 305(b)(4)(B) of the MSA requires Federal agencies to provide a detailed written response to NOAA Fisheries within 30 days after receiving these recommendations. If the response is inconsistent with the recommendations, the action agency must explain why the recommendations will not be followed, including the justification for any disagreements over the effects of the action and the recommendations.

If you have any questions regarding this consultation, please contact Tom Loynes of my staff in the Oregon State Habitat Office at 503.231.6892.

Sincerely,

D. Robert Lohn
Regional Administrator

cc: Molly Cary, ODOT
Nick Testa, ODOT
Steve Mamoyac, ODFW
Randy Reeve, ODFW
Patti Caswell, ODOT
Jevra Brown, Shapiro and Associates

Endangered Species Act - Section 7 Consultation
Biological Opinion

&

Magnuson-Stevens Fishery Conservation and Management Act
Essential Fish Habitat Consultation

Calapooia River (Driver Road) Bridge Replacement Project,
Calapooia River, Linn County, Oregon
(6th Field HUC: 170900030403)

Agency:	Federal Highway Administration
Consultation Conducted By:	NOAA's National Marine Fisheries Service, Northwest Region
Date Issued:	July 26, 2004

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Issued by: _____

D. Robert Lohn
Regional Administrator

NOAA Fisheries No.: 2004/00210

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1. INTRODUCTION

The biological opinion (Opinion) and incidental take statement of this consultation were prepared by NOAA Fisheries in accordance with section 7(a)(2) the Endangered Species Act (ESA) of 1973, as amended (16 USC 1531 *et seq*.), and implementing regulations at 50 CFR 402. The essential fish habitat (EFH) part of this consultation was prepared in accordance with section 305(b)(2) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) (16 USC 1801 *et seq*.) and implementing regulations at 50 CFR 600. The administrative record for this consultation is on file at the NOAA Fisheries, Oregon State Habitat Branch, Portland, Oregon.

1.1 Background and Consultation History

On March 2, 2004, the NOAA's National Marine Fisheries Service (NOAA Fisheries) received a request from the Federal Highway Administration (FHWA) for ESA section 7 formal consultation for a bridge replacement project on the Calapooia River in Linn County, Oregon. The biological assessment (BA) provided by the FHWA with the request for consultation determined that the proposed activities covered would be "likely to adversely affect" anadromous fish species listed under the ESA.

The Calapooia River supports Upper Willamette River (UWR) Chinook salmon *(Oncorhynchus tshawytscha)* and UWR steelhead *(O. mykiss)*. UWR Chinook salmon were listed as threatened under the ESA by NOAA Fisheries on March 24, 1999 (64 FR 14308). Protective regulations for UWR Chinook salmon were issued under section 4(d) of the ESA on July 10, 2000 (65 FR 42422). UWR steelhead were listed as threatened under the ESA by NOAA Fisheries on March 25, 1999 (64 FR 14517). Protective regulations for UWR steelhead were issued under section 4(d) of the ESA on July 10, 2000 (65 FR 42422). The objective of this Opinion is to determine whether the proposed action is likely to jeopardize the continued existence of UWR Chinook salmon or UWR steelhead. The objective of the essential fish habitat (EFH) consultation is to determine whether the proposed action may adversely affect designated EFH for coho salmon and Chinook salmon, and to recommend conservation measures to avoid, minimize, or otherwise offset potential adverse effects to EFH resulting from the proposed action.

1.2 Proposed Action

FHWA proposes to replace the Driver Road Bridge where it spans the Calapooia River. The new bridge would be wider and higher than the existing bridge, with support structures above the river's ordinary high water mark (OHWM).

The existing bridge, constructed in 1939, is a steel pony truss with timber stringer approach spans on each end. It is 41.1 meters (m) long and 5.6 m wide. The piers have concrete footings with timber caps and posts. The old bridge deck is composed of treated timber planks and topped with planking and metal mesh. Along the edges of the deck scuppers are cut out at

intervals. The new bridge will eliminate the scuppers and collect runoff, directing the stormwater into seeded ditches. The proposed replacement bridge is a single-span, 36.6-m long, precast, prestressed, concrete deck bulb-tee (DBT) girder bridge with a width of 9.5 m.

The new structure will increase impervious surface area by 51%, from 230 m^2 to 348 m^2. The bridge is the high point of a vertical curve of the roadway, and all drainage will flow from the middle of the bridge to the ends, and into rocked and seeded ditches at the bridge ends. The drainage water travels about 12.2 m from the edge of the roadway, through the seeded ditches, and eventually into the Calapooia River.

The project will be constructed in one phase and Driver Road will be closed to through traffic. There will not be a need for a temporary detour bridge, work trestles, or work bridge on this project. All work within the channel (removal of existing interior bents and placement of stone embankment) will occur during the designated in-water work period of June 1 through September 30. Sediment fencing will separate the construction activities from the bank slope. The majority of structure-related work will be completed before the end of the in-water work period and should be completed by October 30, 2004. The contractor will use best management practices (BMPs) outlined in the BA, and appropriate containment measures to keep all construction debris out of the water. The containment plan will be approved by the engineer before the beginning of project activities. Green concrete or other pollutants will not come in contact with river water or run-off.

The bridge replacement will consist of the following construction activities: installing containment measures and removing the existing bridge, excavating and filling for end bent pile caps and approach roadways, driving steel pipe piles, forming and pouring concrete pile cap and wingwalls at end bents, erecting concrete girders, pouring wingwalls, installing bridge rails, constructing guardrails, and grading and paving bridge and approach roadways with aggregate base rock and asphalt concrete pavement surfacing.

Below the OHWM, work will be confined to removal of the interior piers and construction of stone embankments to create the subgrade below the pile caps. This work will likely be done in the dry, however, depending on water levels coffer dams may need to be constructed around the piers before removal. The existing steel and timber structure will be removed and precast concrete girders will be erected. The interior piers sit on concrete pads and the timber and concrete will be removed by lifting them out of the channel. The existing end bents, which are outside the OHWM, will be removed to approximately 1 m below subgrade. The bridge superstructure will be removed from roadway level and placed on the closed roadway, where further disassembly will take place for disposal. Waste and stockpile sites will be at approved locations offsite. The contractor will be required to set up and maintain a containment system to prevent debris from entering the stream. The proposed project will require approximately 21 m^3 of excavation below the OHWM to remove the existing concrete footings and substrate at the toe of the rock embankments.

Stone embankments will be placed around both new end bents to protect the bank slope. The lowest extent of the riprap will be the only part of the structure below the OHWM. Approximately 5.4 m^3 of sand bags exist onsite, stabilizing the outer bent on the northern bank. These will be removed before the placement of the riprap. The riprap will amount to 82 m^3 of clean rock fill below the OHWM, covering 9.1 m (linear) of the bank line on the north bank and 18.2 m on the south bank for a total area below OHWM of 68.8 m^2. The riprap will be placed above the existing riprap, which will remain and act as the foundation for the new stone embankment.

The streambanks at the site are vegetated by a narrow strip of native trees and shrubs mixed with invasive reed canarygrass (*Phalaris arundinacea*) and Himalayan blackberry (*Rubus discolor*). The proposed bridge and approach will require approximately 1,500 m^2 to be cleared and grubbed of reed canarygrass, cultivated grasses, and Himalayan blackberry. This includes a small impact (190 m^2) to a potentially jurisdictional wetland in the northeastern quadrant of the project area. No trees will be removed on this project and seeding will occur after roadway and ditch reconstruction. All riparian vegetation removed during construction will be replaced at a 1.5 to 1 ratio with native shrubs, and grasses. The riprap will be planted with willow stakes.

The contractor will probably use the closed road for staging construction activities. All staging areas will be on relatively flat ground and at least 45 m from the OHWM of the Calapooia River. Following completion of the project, all staging areas will be fully restored to pre-project conditions. Vehicles will be fueled and cleaned at the staging area or other approved areas at a distance of 45 m from the OHWM. Staging areas will not impinge on identified wetland areas and will avoid any trees in the area.

2. ENDANGERED SPECIES ACT

2.1 Biological Opinion

2.1.1 Biological Information

The action area is defined by NOAA Fisheries regulations (50 CFR 402.02) as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action." The action area is defined as the streambed and streambank of the Calapooia River, extending upstream to the edge of disturbance, and extending downstream 30 m. UWR spring Chinook and UWR steelhead have spawning and rearing habitat in the river above Brownsville (ODFW 2001).

In a watershed analysis prepared for the Bureau of Land Management (Western Watershed Analysis 1999), the Calapooia River watershed was described as having predominantly forest and agricultural production. Agriculture operations included grass seed, dairy, and livestock production, and was primarily restricted to the valley bottoms. The low elevation alluvial areas were generally at a gradient below 1%, and the river was described as well-confined by

relatively high old terraces, although bordered by more recent and lower elevation floodplain terraces in some relatively isolated areas. Extensive riparian areas and aquatic habitat supported anadromous and resident salmonid fisheries within the watershed.

The analysis described watershed precipitation as mostly rainfall, with 70% or more of annual precipitation falling in November through March. Streamflow recorded by the U.S. Geological Survey at Holley, approximately 12 miles upstream, from 1933 through 1990 showed mean annual streamflow is 437 cubic feet per second (cfs). Streamflow patterns reflect the annual distribution of precipitation, with flows increasing rapidly from their seasonal lows (less than 50 cfs) in the early fall to peak flows. Approximately 60% of all annual peak streamflows occurred in December and January. The largest peak flow of record at Holley (12,600 cfs), occurred on December 22, 1964. A flood of similar magnitude is inferred to have occurred in 1996, based on large floods observed at gaging stations on surrounding rivers. Over the period from 1936 to 1990, the mean annual peak flow at Holley was 5,042 cfs (USGS 2002).

Biological information on UWR Chinook salmon may be found in Myers *et al.* (1998), and information on UWR steelhead in Busby *et al.* (1995, 1996).

2.1.2 Evaluating Proposed Actions

The standards for determining jeopardy are set forth in section 7(a)(2) of the ESA as defined by 50 CFR Part 402.14. NOAA Fisheries must determine whether the action is likely to jeopardize the listed species. This analysis involves the initial steps of defining the biological requirements and current status of the listed species, and evaluating the relevance of the environmental baseline to the species' current status.

Subsequently, NOAA Fisheries evaluates whether the action is likely to jeopardize the ESA listed species by determining if the species can be expected to survive with an adequate potential for recovery. In making this determination, NOAA Fisheries must consider the estimated level of mortality attributable to: (1) Collective effects of the proposed or continuing action, (2) the environmental baseline, and (3) any cumulative effects. If NOAA Fisheries finds that the action is likely to jeopardize the listed species, NOAA Fisheries must identify reasonable and prudent alternatives for the action. For the proposed action, NOAA Fisheries' jeopardy analysis considers direct or indirect mortality of fish attributable to the action.

2.1.3 Biological Requirements

The first step in the methods NOAA Fisheries uses for applying the ESA section 7(a)(2) to listed salmon is to define the species' biological requirements that are most relevant to each consultation. NOAA Fisheries also considers the current status of the listed species taking into account population size, trends, distribution and genetic diversity. To assess the current status of the listed species, NOAA Fisheries starts with the determinations made in its decision to list UWR Chinook salmon and UWR steelhead for ESA protection and also considers new data available that is relevant to the determination.

The relevant biological requirements are those necessary for UWR Chinook salmon and UWR steelhead to survive and recover to naturally-reproducing population levels, at which time protection under the ESA would become unnecessary. Adequate population levels must safeguard the genetic diversity of the listed stock, enhance their capacity to adapt to various environmental conditions, and allow them to become self-sustaining in the natural environment.

For this consultation, the biological requirements are improved habitat characteristics that function to support successful migration, spawning, holding, and rearing. The current status of UWR Chinook salmon and UWR steelhead, based on their risk of extinction, has not significantly improved since the species were listed.

The Calapooia River serves as spawning and rearing habitat for UWR Chinook and UWR steelhead. Based on migratory and other life history timing, it is not likely that adults would be present in the action area when project activities would occur. The proposed project may affect Chinook and steelhead habitat, including water quality, water temperature, water velocity, cover, food, and riparian vegetation. These are modified by shade, sediment, nutrient/chemical regulation, streambank stability, and input of large woody debris/organic matter.

UWR Chinook salmon

The UWR Chinook salmon evolutionarily significant unit (ESU) includes native spring-run populations above Willamette Falls and in the Clackamas River. In the past, it included sizable numbers of spawning salmon in the Santiam River, the middle fork of the Willamette River, and the McKenzie River, as well as smaller numbers in the Calapooia River and other rivers.

Although the total number of Chinook salmon returning to the Willamette River has been relatively high (24,000 UWR Chinook salmon), about 4,000 UWR Chinook salmon fish now spawn naturally in this ESU. There are no direct estimates of the size of the Chinook salmon runs in the Willamette basin before the 1940s. McKernan and Mattson (1950) present anecdotal information that the Native American fishery at Willamette Falls may have yielded 2,000,000 lbs of salmon (454,000 salmon, each weighing 20 lbs). Based on egg collections at salmon hatcheries, Mattson (1948) estimates that the spring Chinook salmon run in the 1920s may have been five times the run size of 55,000 salmon in 1947 (275,000 salmon).

UWR Chinook salmon in this ESU are distinct from those of adjacent ESUs in life history and marine distribution. The life history of Chinook salmon in the UWR ESU includes traits from both ocean- and stream-type development strategies. UWR Chinook salmon mature in their fourth or fifth years. Historically, 5-year-old salmon dominated the spawning migration runs, recently, however, most salmon have matured at age 4. The timing of the spawning migration is limited by Willamette Falls. High flows in the spring allow access to the Upper Willamette River basin, whereas low flows in the summer and autumn prevent later-migrating fish from ascending the falls.

UWR steelhead

The UWR steelhead ESU occupies the Willamette River and its tributaries upstream of Willamette Falls extending to, and including, the Calapooia River. Rivers that contain naturally-spawning winter-run steelhead include the Tualatin River, Molalla River, Santiam River, Calapooia River, Yamhill River, Rickreall Creek, Luckiamute River, and Mary's River. Native winter steelhead within this ESU have been declining since 1971, and have exhibited large fluctuations in abundance. In general, native steelhead of the Upper Willamette basin are late-migrating winter steelhead, entering freshwater primarily in March and April. This atypical run timing appears to be an adaptation for ascending Willamette Falls, which functions as an isolating mechanism for UWR steelhead. Reproductive isolation resulting from the falls may explain the genetic distinction between steelhead from the Upper Willamette River basin and those in the lower river. UWR late-migrating steelhead are ocean-maturing fish. Most return at age 4, with a small proportion returning as 5-year-olds (Busby *et al.* 1996).

In the Calapooia River, ODFW spawning survey records from 1980-1997 show the number of late-run winter steelhead redds per mile varying from a high of 15.8 redds/mile in 1985, to as low as 1.1 redd/mile in 1993, with an average of 7.4 redds/mile. The range estimated for the run size varied from 744 in 1988, to 21 in 1993.

2.1.4 Environmental Baseline

Regulations implementing section 7 of the ESA (50 CFR 402.02) define the environmental baseline as the past and present impacts of all Federal, state, or private actions and other human activities in the action area. The environmental baseline also includes the anticipated impacts of all proposed Federal projects in the action area that have undergone section 7 consultation, and the impacts of state and private actions that are contemporaneous with the consultation in progress. The action area is defined in 50 CFR 402.02 to mean "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action."

The identified action will occur within the range of UWR Chinook salmon and UWR steelhead. The defined action area is the area that is directly and indirectly affected by the action. The direct effects occur at the project site and may extend upstream or downstream based on the potential for impairing fish passage, hydraulics, and for generating sediment and pollutants. Indirect effects may occur throughout the watershed where actions described in this Opinion lead to additional activities or affect ecological functions contributing to stream degradation. As such, the action area for the proposed activities includes the immediate watershed where the bridge will be replaced, and those areas upstream and downstream that may reasonably be affected, temporarily or in the long term. For the purposes of this Opinion, the action area is defined as the streambed and streambank of the Calapooia River, extending upstream to the edge of disturbance, and extending downstream 30 m. Other areas of the Calapooia River watershed are not expected to be directly or indirectly impacted. The project area serves as migration and rearing habitat for adult and juvenile steelhead and Chinook salmon.

In the Willamette River basin, channelization, dredging, and other activities have reduced rearing habitat (*i.e.*, stream shoreline) by as much as 75%. In addition, dams have blocked access to spawning habitat, and altered the hydrologic and temperature regime, affecting the timing of development of naturally-spawned eggs and fry. Water quality is also affected by development and other economic activities. Agricultural and urban land uses as well as timber harvesting contribute to increased erosion and sediment load in Willamette River basin streams and rivers. In the upper Calapooia River watershed, heavy logging included the use of splash dams, reinforcing the natural fluctuation of peak and low flows. The peak flows from the dams scoured gravel and removed large woody debris from the system. Current dams on the Calapooia River are at Brownsville, Sodom Ditch, and Thompson, and are all downstream from the project site and all are providing fish passage.

The Calapooia River originates in the Willamette National Forest in the western foothills of the Cascades in southern Linn County, Oregon. The river flows east to west, turning northwest near the I-5 crossing, and is approximately 121 kilometers (km) long. It drains 969 km^2 (ODFW 1990). The elevation of the headwaters is approximately 1,581 m and drops to 50.3 m near its confluence with the Willamette River at Albany, Oregon.

Much of the upper Calapooia River is bedrock-constrained and has cool waters that flow through mainly private forest land. The riparian area contains hardwood forests with cottonwood (*Populus spp.*), maple (*Acer spp.*), and ash (*Fraxinus spp.*). In the Willamette Valley, the river meanders through low gradient alluvial flats with heavy agricultural use (ODFW 1990).

The Calapooia River receives little snowmelt, so summer flows are very low. Thompson Mill at river kilometer (RKm) 37.8 completely regulates flow in the lower river through the use of two dams; the Thompson Dam and the Sodom Dam. At the mill, Thompson Dam can divert water from the river through the mill. Above the mill, at RKm 45.9, Sodom Ditch splits from the mainstem of the Calapooia River. Sodom Dam, approximately 0.8 km downstream from the entrance of Sodom Ditch, can divert water flow out of the main channel into the ditch. This water bypasses the mill entirely. Sodom Ditch runs flows into Butte Creek more than 0.8 km above the confluence of the creek with the Calapooia River at about RKm 31.4.

During winter and spring high flows, returning fish, having entered Sodom Ditch from Butte Creek, must negotiate a fish ladder on the 2.4-m Sodom Dam. Fish continuing up the Calapooia River mainstem encounter the 1.5-m dam and fish ladder on the Thompson Mill diversion ditch. Fish passage becomes limited at both ladders during low flows.

Hatchery production in the basin began in the late nineteenth century. Eggs were transported throughout the basin, resulting in current populations that are relatively homogeneous genetically (although still distinct from those of surrounding ESUs). Hatchery production continues in the Willamette River, and is responsible for as much as 90% of Chinook escapement in the basin. Harvest on the UWR Chinook ESU is high, both in the ocean and in-river. The total in-river harvest below the falls from 1991 through 1995 averaged 33%, and was much higher before 1991. Ocean harvest was estimated as 16% for 1982 through 1989. For the

UWR Chinook salmon ESU as a whole, NOAA Fisheries estimates that the median population growth rate (lambda) over the base period ranges from 1.01 to 0.63, decreasing as the effectiveness of hatchery fish spawning in the wild increases compared to that of fish of wild origin (Tables B-2a and B-2b in McClure *et al.* 2000b).

Recent estimates of the percentage of naturally-spawning UWR steelhead attributable to hatcheries in the late 1990s are less than 5% in the Calapooia Basin (Chilcote 1997). For the UWR steelhead ESU as a whole, NOAA Fisheries estimates that the lambda over the base period ranges from 0.94 to 0.87, decreasing as the effectiveness of hatchery fish spawning in the wild increases compared to that of fish of wild origin (Tables B-2a and B-2b in McClure *et al.* 2000b).

The Oregon Department of Environmental Quality (ODEQ) is required by the Federal Clean Water Act (CWA) to assess water quality throughout the state and to maintain a list of steam segments that do not meet water quality standards. These streams are water-quality limited, and the list is called the 303(d) list because of the section of the Clean Water Act that requires the list be maintained.

This stretch of the Calapooia River is on the 303(d) list (ODEQ 2002) for temperature, with 94% of ODEQ data summer values exceeding the standard (64 ˚F), with a maximum of 80.6 ˚F. Other 303(d) criteria for which it is listed are dissolved oxygen, and bacteria (fecal coliform) much of which is due to livestock and septic systems. In addition to these pollutants, there are other factors which limit the value and quality of habitat for fish. Many wetlands, meanders, and off-channel habitat features have been eliminated through the use of revetments and other methods to keep the river from encroaching on cultivated land. This has reduced the overall habitat complexity, which results in changes in species abundance, composition, and distribution. Those channel streambanks which have been stabilized with riprap have reduced riparian vegetation that would contribute to the deposition of large woody debris, shade to cool the river in the summer, and benthic input.

Based on the best available information on the current status of UWR steelhead and Chinook salmon range-wide, the population status, trends, and genetics, and the poor environmental baseline conditions within the action area, NOAA Fisheries concludes that the biological requirements of the identified ESUs within the action area are not currently being met. The Calapooia River has degraded habitat resulting from agricultural and forestry practices, water diversions, road construction, urbanization, recreation, and flood control. The following habitat indicators are functioning at risk within the action area, predominantly at unacceptable risk as noted in the FHWA BA: Temperature, sediment, chemical contamination/nutrients, substrate, large woody debris, off-channel habitat, pool frequency and quality, refugia, width/depth ratio, streambank condition, floodplain connectivity, peak/base flows, increase in drainage network, riparian reserves, and disturbance history. Actions that do not maintain or restore properly functioning aquatic habitat conditions would be likely to jeopardize the continued existence of UWR steelhead and UWR Chinook salmon.

2.1.5 Analysis of Effects

2.1.5.1 Effects of Proposed Action

The effects determination in this Opinion was made using a method for evaluating current aquatic conditions, the environmental baseline, and predicting effects of actions on them. This process is described in the document *Making ESA Determinations of Effect for Individual or Grouped Actions at the Watershed Scale* (NMFS 1996). The effects of actions are expressed in terms of the expected effect, to restore, maintain, or degrade, on aquatic habitat factors in the project area. The current status of the Calapooia River is degraded because of the lack of riparian vegetation, the lack of large woody debris (instream structure), the lack of flow refugia and off-channel habitat, and the effects of existing rock on channel morphology and water temperatures.

The proposed action has the potential to cause the following impacts to UWR Chinook and UWR steelhead:

Construction Activities

In-water construction activities would occur within cofferdams. The effects of cofferdam installation and removal, fish removal and handling, and ground disturbance are discussed below.

Fish may be killed, or more likely temporarily displaced, by in-water work activities. Aspects of the proposed action most likely to injure or kill ESA-listed salmon and steelhead are the isolation of the in-water work area, and fish removal and handling. Although in-water work area isolation is a conservation measure intended to minimize adverse effects from instream construction activities to fish present in the work isolation area, some fish may be captured, handled, and released. Capturing and handling fish causes physiological stress, though overall effects of the procedure are generally short-lived if appropriate precautions are exercised. The primary factors controlling the likelihood of stress and death from handling are differences in water temperatures (between the river and transfer containers), dissolved oxygen concentrations, the amount of time that fish are held out of the water, and the extent of physical trauma. Stress on salmonids increases rapidly from handling if the water temperature exceeds 18°C or if dissolved oxygen concentration is below saturation.

The in-water work period recommended by the ODFW (June 1st to September 30th) of a given year, and the proposed fish removal methods, are likely to minimize the adverse effects from work area isolation and fish handling as abundance of adult and juvenile salmon and steelhead is likely to be low at this time of year.

In-water construction activities (*i.e.*, cofferdam installation and bridge removal) are likely to temporarily increase concentrations of total suspended solids (TSS) and turbidity. Potential effects from project-related increases in turbidity on salmonid fishes include, but are not limited to: (1) Reduction in feeding rates and growth, (2) increased mortality, (3) physiological stress,

(4) behavioral avoidance, (5) reduction in macroinvertebrate populations, and (6) temporary beneficial effects. Potential beneficial effects include a reduction in piscivorous fish/bird predation rates, enhanced cover conditions, and improved survival conditions.

The proposed in-water work is likely to cause minor, short-term turbidity downstream from the work area. These increases in turbidity are likely to increase physiological stress, physical injury (*e.g.*, gill abrasion), and potentially displace rearing juvenile salmon and steelhead. Restricting in-water work to June 1st to September 30th, and the use of cofferdams, is likely to minimize the above effects on rearing juvenile salmon and steelhead.

Increases in TSS can adversely affect filter-feeding macroinvertebrates and fish feeding. At concentrations of 53 to 92 parts per million (ppm) (24 hours) macroinvertebrate populations were reduced (Gammon 1970). Concentrations of 250 ppm (1 hour) caused a 95% reduction in feeding rates in juvenile coho salmon (Noggle 1978). Concentrations of 1200 ppm (96 hours) killed juvenile coho salmon (Noggle 1978). Concentrations of 53.5 ppm (12 hours) caused physiological stress and changes in behavior in coho salmon (Berg 1983). Because the in-water work will be isolated, TSS levels are expected to be very low or non-existent.

Ground Disturbance

Ground disturbance, required to remove and install the bridge, would remove existing vegetation that provides effective ground cover and erosion minimization from rainfall, increasing suspended sediment. Effects of increased suspended sediment are likely to lead to effects similar to those described above in section 1.2. Although much of the vegetation will be removed from the project site, it is primarily non-native and site restoration will establish native vegetation on the site.

Water Quality - Potential Spills, Stormwater Treatment, and Removal of Treated Wood

Operation of excavation equipment requires the use of fuel, lubricants, coolants, *etc.*, which if spilled into a waterbody could injure or kill aquatic organisms. The proposed action includes a spill containment and control plan, which will help ensure protection of the waterbody and the existing riparian vegetation.

The existing bridge contains some treated timber planking, which will need to be fully contained during construction. Copper is the main metal of concern because it is the most acutely toxic. Copper also leaches the most readily, followed by arsenic and chromium (Warner and Solomon 1990). Creosote contains over 300 compounds, including a variety of polycyclic aromatic hydrocarbons (PAHs). Some PAHs are very toxic and bioconcentrate (NMFS 1998). Potential effects of elevated water column and sediments concentrations of copper and PAHs to the subject species include, but are not limited to: (1) Reduced growth and survival rates; (2) altered hematology; and (3) reproductive effects, including reduced frequency of spawning, reduced egg production, and increased deformities in fry (Sorensen 1991).

The new structure will increase impervious surface area by 51%, from 230 m2 to 348 m2. The bridge is the apex in a vertical curve of the roadway, so that all drainage will flow from the

middle of the bridge to each end, where runoff flows into rocked and seeded ditches at the northwest and southwest quadrants of the structure. The drainage water travels about 12.2 m from the edge of the roadway, through the seeded ditches, and eventually into the Calapooia River. The existing structure has scuppers along the length of the bridge. The new bridge will eliminate the scuppers and allow the stormwater to infiltrate before reaching the Calapooia River.

2.1.6 Cumulative Effects

Cumulative effects are defined in 50 CFR 402.02 as those effects of "future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation." Future Federal actions, including the ongoing operation of hydropower systems, hatcheries, fisheries, and land management activities are being (or have been) reviewed through separate section 7 consultation processes. Therefore, these actions are not considered cumulative to the proposed action.

NOAA Fisheries is not aware of any specific future non-federal activities within the action area that would cause greater impacts to listed species than presently occurs. NOAA Fisheries assumes that future private and state actions will continue at similar intensities as in recent years.

2.1.7 Conclusion

NOAA Fisheries has determined, based on the available information, that the proposed action covered in this Opinion is not likely to jeopardize the continued existence of listed salmonids. NOAA Fisheries used the best available scientific and commercial data to apply its jeopardy analysis, analyzing the effects of the proposed action on the biological requirements of the species relative to the environmental baseline, together with cumulative effects. NOAA Fisheries believes that the proposed action would cause a minor, short-term degradation of anadromous salmonid habitat due to potential turbidity caused by project construction.

2.1.8 Conservation Recommendations

Section 7(a)(1) of the ESA directs Federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of the threatened and endangered species. Conservation recommendations are discretionary measures suggested to minimize or avoid adverse effects of a proposed action on listed species or to develop additional information.

2.1.9 Reinitiation of Consultation

This concludes formal consultation on these actions in accordance with 50 CFR 402.14(b)(1). Reinitiation of consultation is required: (1) If the amount or extent of incidental take is exceeded; (2) if the action is modified in a way that causes an effect on the listed species that was not previously considered in the BA and this Opinion; (3) new information or project

monitoring reveals effects of the action that may affect the listed species in a way not previously considered; or (4) a new species is listed or critical habitat is designated that may be affected by the action (50 CFR 402.16).

2.2 Incidental Take Statement

The ESA at section 9 [16 USC 1538] prohibits take of endangered species. The prohibition of take is extended to threatened anadromous salmonids by section 4(d) rule [50 CFR 223.203]. Take is defined by the statute as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." [16 USC 1532(19)] Harm is defined by regulation as "an act which actually kills or injures fish or wildlife. Such an act may include significant habitat modification or degradation which actually kills or injures fish or wildlife by significantly impairing essential behavior patterns, including, breeding, spawning, rearing, migrating, feeding or sheltering." [50 CFR 222.102] Harass is defined as "an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering." [50 CFR 17.3] Incidental take is defined as "takings that result from, but are not the purpose of, carrying out an otherwise lawful activity conducted by the Federal agency or applicant." [50 CFR 402.02] The ESA at section 7(o)(2) removes the prohibition from any incidental taking that is in compliance with the terms and conditions specified in a section 7(b)(4) incidental take statement [16 USC 1536].

2.2.1 Amount or Extent of the Take

NOAA Fisheries anticipates that the action covered by this Opinion is reasonably certain to result in incidental take of UWR Chinook salmon and UWR steelhead because of the potential for turbidity, injuring and/or killing individual fish during the work area isolation, and delayed mortality due to handling during the fish salvage process. Effects of actions such as these are largely unquantifiable in the short term, and are not expected to be measurable as long-term harm to habitat features or by long-term changes to UWR Chinook salmon and UWR steelhead populations. Therefore, even though NOAA Fisheries expects some low-level incidental take to occur due to the actions covered by this Opinion, the best scientific and commercial data available are not sufficient to enable NOAA Fisheries to estimate a specific amount of incidental take to the species itself. In instances such as these, the NOAA Fisheries designates the expected level of take as "unquantifiable". Based on the information in the BA, NOAA Fisheries anticipates that an unquantifiable amount of incidental take is reasonably certain to occur as a result of the actions covered by this Opinion.

In addition, NOAA Fisheries expects that the possibility exists for handling UWR Chinook salmon and UWR steelhead during the work isolation process, which will result in incidental take to individuals during the construction period. NOAA Fisheries anticipates that incidental take of up to twenty juvenile UWR Chinook salmon and UWR steelhead, including injury of nineteen and death of one individual(s), could occur as a result of the fish salvage process. This take estimate is based on approximately 20 m^2 of stream habitat that will be dewatered during

work area isolation. The extent of the take is limited to UWR Chinook salmon and UWR steelhead within the action area. The extent of the take includes the streambed and streambank of the Calapooia River extending upstream to the edge of disturbance, and downstream to the lower extent of turbidity.

2.2 Reasonable and Prudent Measures

NOAA Fisheries believes that the following reasonable and prudent measures are necessary and appropriate to avoid or minimize take of listed salmonid species resulting from the action covered by this Opinion. The FHWA shall include measures that will:

1. Minimization of incidental take from general construction by applying conditions to the proposed action that avoid or minimize adverse effects to riparian and aquatic systems.

2. Completion of a comprehensive monitoring and reporting program to confirm this Opinion is meeting its objective of minimizing take from the proposed action.

2.3 Terms and Conditions

To be exempt from the prohibitions of section 9 of the ESA, the FHWA and/or their contractors must comply with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are non-discretionary.

1. To implement reasonable and prudent measure #1 (general conditions for construction, operation and maintenance), the FHWA shall ensure that:

    a. Timing of in-water work. Work within the active channel of the Calapooia River will be completed during the period of June 1st to September 30th. All in-water work must be completed within these dates unless otherwise approved in writing by NOAA Fisheries.
    b. Minimum Area. Confine construction impacts to the minimum area necessary to complete the project.
    c. Cessation of work. Project operations will cease under high flow conditions that may result in inundation of the project area, except for efforts to avoid or minimize resource damage.
    d. Fish screens. All water intakes used for a project, including pumps used to isolate an in-water work area, will have a fish screen installed, operated and maintained according to NOAA Fisheries' fish screen criteria.[1]

[1] National Marine Fisheries Service, *Juvenile Fish Screen Criteria* (revised February 16, 1995) and *Addendum: Juvenile Fish Screen Criteria for Pump Intakes* (May 9, 1996) (guidelines and criteria for migrant fish passage facilities, and new pump intakes and existing inadequate pump intake screens) (http://www.nwr.noaa.gov/1hydrop/hydroweb/ferc.htm).

e. Pollution and Erosion Control Plan. A pollution and erosion control plan will be prepared and carried out to prevent pollution related to construction operations. The plan must be available for inspection on request by FHWA or NOAA Fisheries.

i. Plan Contents. The pollution and erosion control plan must contain the pertinent elements listed below, and meet requirements of all applicable laws and regulations.

(1) Practices to prevent erosion and sedimentation associated with access roads, stream crossings, construction sites, borrow pit operations, haul roads, equipment and material storage sites, fueling operations and staging areas.

(2) Practices to confine, remove and dispose of excess concrete, cement and other mortars or bonding agents, including measures for washout facilities.

(3) A description of any hazardous products or materials that will be used for the project, including procedures for inventory, storage, handling, and monitoring.

(4) A spill containment and control plan with notification procedures, specific clean up and disposal instructions for different products, quick response containment and clean up measures that will be available on the site, proposed methods for disposal of spilled materials, and employee training for spill containment.

(5) Practices to prevent construction debris from dropping into any stream or waterbody, and to remove any material that does drop with a minimum disturbance to the streambed and water quality.

ii. Inspection of erosion controls. During construction, all erosion controls must be inspected daily during the rainy season and weekly during the dry season to ensure they are working adequately.[2]

(1) If inspection shows that the erosion controls are ineffective, work crews must be mobilized immediately to make repairs, install replacements, or install additional controls as necessary.

(2) Sediment must be removed from erosion controls once it has reached 1/3 of the exposed height of the control.

g. Construction discharge water. All discharge water created by construction (*e.g.*, concrete washout, pumping for work area isolation, vehicle wash water) will be treated as follows:

i. Water quality. Facilities must be designed, built and maintained to collect and treat all construction discharge water using the best available technology applicable to site conditions. The treatment must remove debris, nutrients, sediment, petroleum hydrocarbons, metals and other pollutants likely to be present.

[2] "Working adequately" means no turbidity plumes are evident during any part of the year.

ii. Discharge velocity. If construction discharge water is released using an outfall or diffuser port, velocities must not exceed 4 feet per second.

iii. Spawning areas, marine submerged vegetation. No construction discharge water may be released within 300 feet upstream of active spawning areas or areas with marine submerged vegetation.

h. Preconstruction activity. Before significant[3] alteration of the project area, the following actions must be completed:

i. Marking. Flag the boundaries of clearing limits associated with site access and construction to prevent ground disturbance of critical riparian vegetation, wetlands and other sensitive sites beyond the flagged boundary.

ii. Emergency erosion controls. Ensure that the following materials for emergency erosion control are onsite:

(1) A supply of sediment control materials (*e.g.*, silt fence, straw bales[4]).

(2) An oil-absorbing, floating boom whenever surface water is present.

iii. Temporary erosion controls. All temporary erosion controls must be in-place and appropriately installed downslope of project activity within the riparian area until site restoration is complete.

i. Heavy Equipment. Use of heavy equipment will be restricted as follows:

i. Choice of equipment. When heavy equipment must be used, the equipment selected must have the least adverse effects on the environment (*e.g.*, minimally-sized, rubber-tired).

ii. Vehicle staging. Vehicles must be fueled, operated, maintained, and stored as follows:

(1) Vehicle staging, cleaning, maintenance, refueling, and fuel storage must take place in a vehicle staging area placed 150 feet or more from any stream, waterbody or wetland.

(2) All vehicles operated within 150 feet of any stream, waterbody or wetland must be inspected daily for fluid leaks before leaving the vehicle staging area. Any leaks detected must be repaired in the vehicle staging area before the vehicle resumes operation. Inspections must be documented in a record that is available for review on request by FHWA or NOAA Fisheries.

(3) All equipment operated instream must be cleaned before beginning operations below the bankfull elevation to remove all external oil, grease, dirt, and mud.

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[3] "Significant" means an effect can be meaningfully measured, detected or evaluated.

[4] When available, certified weed-free straw or hay bales must be used to prevent introduction of noxious weeds.

iii. Stationary power equipment. Stationary power equipment (*e.g.*, generators, cranes) operated within 150 feet of any stream, waterbody or wetland must be diapered to prevent leaks, unless otherwise approved in writing by NOAA Fisheries.

j. Site preparation. Native materials will be conserved for site restoration.
   i. If possible, native materials must be left where they are found.
   ii. Materials that are moved, damaged or destroyed must be replaced with a functional equivalent during site restoration.
   iii. Any large wood,[5] native vegetation, weed-free topsoil, and native channel material displaced by construction must be stockpiled for use during site restoration.

k. Isolation of in-water work area. If adult or juvenile fish are reasonably certain to be present, the work area will be well isolated from the active flowing stream using inflatable bags, sandbags, sheet pilings, or similar materials. The work area will also be isolated if in-water work may occur within 300 feet upstream of spawning habitats.

l. Capture and release. Before and intermittently during pumping to isolate an in-water work area, an attempt must be made to capture and release fish from the isolated area using trapping, seining, electrofishing, or other methods as are prudent to minimize risk of injury.
   i. A fishery biologist experienced with work area isolation and competent to ensure the safe handling of all ESA-listed salmon and steelhead must conduct or supervise the entire capture and release operation.
   ii. If electrofishing equipment is used to capture fish, the capture team must comply with NOAA Fisheries' electrofishing guidelines.[6]
   iii. The capture team must handle ESA-listed salmon and steelhead with extreme care, keeping fish in water to the maximum extent possible during seining and transfer procedures to prevent the added stress of out-of-water handling.
   iv. Captured fish must be released as near as possible to capture sites.
   v. ESA-listed salmon and steelhead may not be transferred to anyone except NOAA Fisheries personnel, unless otherwise approved in writing by NOAA Fisheries.
   vi. Other Federal, state, and local permits necessary to conduct the capture and release activity must be obtained.

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[5] For purposes of this Opinion only, "large wood" means a tree, log, or rootwad big enough to dissipate stream energy associated with high flows, capture bedload, stabilize streambanks, influence channel characteristics, and otherwise support aquatic habitat function, given the slope and bankfull width of the stream in which the wood occurs. See, Oregon Department of Forestry and Oregon Department of Fish and Wildlife, *A Guide to Placing Large Wood in Streams*, May 1995 (www.odf.state.or.us/FP/RefLibrary/LargeWoodPlacemntGuide5-95.doc).

[6] National Marine Fisheries Service, *Backpack Electrofishing Guidelines* (December 1998) (http://www.nwr.noaa.gov/1salmon/salmesa/pubs/electrog.pdf).

vii. NOAA Fisheries or its designated representative must be allowed to accompany the capture team during the capture and release activity, and must be allowed to inspect the team's capture and release records and facilities.

m. Earthwork. Earthwork (including, excavation, filling and compacting) will be completed as quickly as possible.

i. Site stabilization. All disturbed areas must be stabilized, including obliteration of temporary roads, within 12 hours of any break in work unless construction will resume work within 7 days between June 1st and September 30th, or within two days between October 1st and May 31st.

ii. Source of materials. Boulders, rock, woody materials and other natural construction materials used for the project must be obtained outside the riparian area.

n. Site restoration. All streambanks, soils and vegetation disturbed by the project are cleaned up and restored as follows:

i. Restoration goal. The goal of site restoration is renewal of habitat access, water quality, production of habitat elements (such as large woody debris), channel conditions, flows, watershed conditions and other ecosystem processes that form and maintain productive fish habitats.

ii. Streambank shaping. Damaged streambanks must be restored to a natural slope, pattern and profile suitable for establishment of permanent native woody vegetation.

iii. Revegetation. Areas requiring revegetation must be replanted before the first April 15th following construction with a diverse assemblage of species that are native to the project area or region, including grasses, forbs, shrubs and trees.

iv. Pesticides. No pesticide application is allowed, although mechanical or other methods may be used to control weeds and unwanted vegetation.

v. Fertilizer. No surface application of fertilizer may occur within 50 feet of any stream channel.

vi. Fencing. Fencing must be installed as necessary to prevent access to revegetated sites by livestock or unauthorized persons.

o. Treated wood

i. Projects that require removal of treated wood will use the following precautions:

(1) Treated wood debris. Take care to ensure that no treated wood debris falls into the water. If treated wood debris does fall into the water, remove it immediately.

(2) Disposal of treated wood debris. Dispose of all treated wood debris removed during a project, including treated wood pilings, at an upland facility approved for hazardous materials of this classification. Do not leave a treated wood piling in the water or stacked on the streambank.

p. Bridge Demolition. A bridge demolition plan must be approved by NOAA Fisheries before removal of the existing structures.

q. Bridge Containment. Containment measures will be in place to fully capture all demolition debris

i. The containment structures will be maintained to preserve integrity throughout the term of the project.

2. To implement reasonable and prudent measure #2 (monitoring), the FHWA shall:

a. Implementation monitoring. Ensure that the applicant submits a monitoring report to the FHWA within 120 days of project completion describing the permittee's success meeting permit conditions. The monitoring report will include the following information:

i. Project identification

(1) Applicant name, permit number, and project name.

(2) Project location, including any compensatory mitigation site(s), by 6th field HUC and by latitude and longitude as determined from the appropriate USGS 7-minute quadrangle map.

(3) FHWA contact person.

(4) Starting and ending dates for work completed.

(a) Photo documentation. Photo of habitat conditions at the project and any compensation site(s), before, during, and after project completion.[7]

(b) Include general views and close-ups showing details of the project and project area, including pre and post construction.

(c) Label each photo with date, time, project name, photographer's name, and a comment about the subject.

ii. Other data. Additional project-specific data, as appropriate for individual projects.

(1) Work cessation. Dates work cessation was required due to high flows.

(2) Fish screen. Compliance with NOAA Fisheries' fish screen criteria.

(3) A summary of pollution and erosion control inspections, including any erosion control failure, hazardous material spill, and correction effort.

(4) Site preparation.

(a) Total cleared area – riparian and upland.

(b) Total new impervious area.

[7] Relevant habitat conditions may include characteristics of channels, eroding and stable streambanks in the project area, riparian vegetation, water quality, flows at base, bankfull and over-bankfull stages, and other visually discernable environmental conditions at the project area, and upstream and downstream from the project.

(5) Isolation of in-water work area, capture and release.
- (a) Supervisory fish biologist – name and address.
- (b) Methods of work area isolation and take minimization.
- (c) Stream conditions before, during and within one week after completion of work area isolation.
- (d) Means of fish capture.
- (e) Number of fish captured by species.
- (f) Location and condition of all fish released.
- (g) Any incidence of observed injury or mortality.

(6) Site restoration.
- (a) Finished grade slopes and elevations.
- (b) Log and rock structure elevations, orientation, and anchoring (if any).
- (c) Planting composition and density.
- (d) A 5-year plan to:
  - (i) Inspect and, if necessary, replace failed plantings to achieve 100% survival at the end of the first year, and 80% survival or 80% coverage after 5 years (including both plantings and natural recruitment).
  - (ii) Control invasive non-native vegetation.
  - (iii) Protect plantings from wildlife damage and other harm.

b. Reporting. On an annual basis for 5 years after completing the project, the FHWA shall ensure submital of a monitoring report to NOAA Fisheries describing the applicant's success in meeting their habitat restoration goals of any riparian plantings. This report will consist of the following information:

i Project identification.
- (1) Project name.
- (2) Starting and ending dates of work completed for this project.
- (3) The FHWA contact person.

ii Riparian restoration. Documentation of the following conditions:
- (1) Any changes in planting composition and density.
- (2) A plan to inspect and, if necessary, replace failed plantings and structures.

iii Monitoring reports will be submitted to:

NOAA Fisheries
Oregon State Habitat Office
Attn: 2004/00210
525 NE Oregon Street, Suite 500
Portland, OR 97232-2778

3. MAGNUSON-STEVENS FISHERY CONSERVATION AND MANAGEMENT ACT

3.1 Background

The objective of the essential fish habitat (EFH) consultation is to determine whether the proposed action may adversely affect designated EFH for relevant species, and to recommend conservation measures to avoid, minimize, or otherwise offset potential adverse effects to EFH resulting from the proposed action.

3.2 Magnuson-Stevens Fishery Conservation and Management Act

The MSA, as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-297), requires the inclusion of EFH descriptions in Federal fishery management plans. In addition, the MSA requires Federal agencies to consult with NOAA Fisheries on activities that may adversely affect EFH.

EFH means those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (MSA §3). For the purpose of interpreting the definition of EFH, "waters" include aquatic areas and their associated physical, chemical, and biological properties that are used by fish, and may include aquatic areas historically used by fish where appropriate. "Substrate" includes sediment, hard bottom, structures underlying the waters, and associated biological communities. "Necessary" means the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem, and "spawning, breeding, feeding, or growth to maturity" covers a species' full life cycle (50CFR600.110).

Section 305(b) of the MSA (16 U.S.C. 1855(b)) requires that:

- Federal agencies must consult with NOAA Fisheries on all actions, or proposed actions, authorized, funded, or undertaken by the agency, that may adversely affect EFH;

- NOAA Fisheries shall provide conservation recommendations for any Federal or state activity that may adversely affect EFH;

- Federal agencies shall within 30 days after receiving conservation recommendations from NOAA Fisheries provide a detailed response in writing to NOAA Fisheries regarding the conservation recommendations. The response shall include a description of measures proposed by the agency for avoiding, mitigating, or offsetting the impact of the activity on EFH. In the case of a response that is inconsistent with the conservation recommendations of NOAA Fisheries, the Federal agency shall explain its reasons for not following the recommendations.

The MSA requires consultation for all actions that may adversely affect EFH, and does not distinguish between actions within EFH and actions outside EFH. Any reasonable attempt to

encourage the conservation of EFH must take into account actions that occur outside EFH, such as upstream and upslope activities that may have an adverse effect on EFH. Therefore, EFH consultation with NOAA Fisheries is required by Federal agencies undertaking, permitting, or funding activities that may adversely affect EFH, regardless of its location.

3.3 Identification of EFH

The Pacific Fisheries Management Council (PFMC) has designated EFH for federally-managed fisheries within the waters of Washington, Oregon, and California. Freshwater EFH for Pacific salmon includes all those streams, lakes, ponds, wetlands, and other water bodies currently, or historically accessible to salmon in Washington, Oregon, Idaho, and California, except areas upstream of certain impassable man-made barriers (as identified by the PFMC), and longstanding, naturally-impassable barriers (*i.e.*, natural waterfalls in existence for several hundred years) (PFMC 1999). In estuarine and marine areas, designated salmon EFH extends from the nearshore and tidal submerged environments within state territorial waters out to the full extent of the exclusive economic zone (370.4 km) offshore of Washington, Oregon, and California north of Point Conception to the Canadian border. Detailed descriptions and identifications of EFH for salmon are found in Appendix A to Amendment 14 to the *Pacific Coast Salmon Plan* (PFMC 1999). Assessment of the potential adverse effects to these species' EFH from the proposed action is based on this information.

3.4 Proposed Actions

The proposed action is detailed above in section 1.2. This area has been designated as EFH for various life stages of Chinook salmon and coho salmon.

3.5 Effects of Proposed Action

As described in detail in section 1.5, the proposed activities may result in detrimental short-term adverse effects, but long-term improvements to certain habitat parameters. These impacts include: the release of sediment during the removal of instream supports, minor disturbance to the existing riparian habitat on the streambank above the riprap, and minor changes to the hydraulic regime of the channel. Long-term improvement in habitat will occur through the elimination of the leaching of chemical contaminants from the treated wood support structures, and an improved hydraulic opening in the channel.

3.6 Conclusion

NOAA Fisheries believes that the proposed action may adversely affect the EFH for Chinook salmon and coho salmon.

3.7 EFH Conservation Recommendations

Pursuant to section 305(b)(4)(A) of the MSA, NOAA Fisheries is required to provide EFH conservation recommendations for any Federal or state agency action that would adversely affect EFH. The conservation measures proposed for the project by the FHWA and all of the reasonable and prudent measures and the terms and conditions contained in sections 2.2 and 2.3 are applicable to EFH. Therefore, NOAA Fisheries incorporates each of those measures here as EFH conservation recommendations.

3.8 Statutory Response Requirement

Please note that the MSA (section 305(b)) and 50 CFR 600.920(j) requires the Federal agency to provide a written response to NOAA Fisheries after receiving EFH conservation recommendations within 30 days of its receipt of this letter. This response must include a description of measures proposed by the agency to avoid, minimize, mitigate or offset the adverse impacts of the activity on EFH. If the response is inconsistent with a conservation recommendation from NOAA Fisheries, the agency must explain its reasons for not following the recommendation.

3.9 Supplemental Consultation

The FHWA must reinitiate EFH consultation with NOAA Fisheries if the action is substantially revised or new information becomes available that affects the basis for NOAA Fisheries' EFH conservation recommendations (50 CFR 600.920).

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